Title: MULTISTREAM PROCESSING MEMORY-AND BARRIER-SYNCHRONIZATION METHOD AND APPARATUS

#### REMARKS

This responds to the Office Action mailed on September 11, 2007.

Claims 1, 11, 21, 24 and 27 are amended, no claims are canceled, and no claims are added; as a result, claims 1-6, 9-14 and 19-29 are now pending in this application.

### **Telephonic Interview Summary**

Applicant thanks to Examiner Arpan P. Salva for extending the courtesy of a telephonic interview with Applicant's representative, Thomas F. Brennan, on October 25, 2007. We discussed the pending claims and, in particular, the functions of the queues in enforcing an ordering in the commitment of pending memory requests to memory. Applicant agreed to amend independent claims to more clearly define this difference with respect to Smith et al. (US 2002/0116600). Although no final agreement was reached as to the allowability of the claims, the interview was helpful in the preparation of the present response.

#### Telephonic Interview Request

In the event that the present claim amendments do not result in allowance of all claims, Applicant respectfully requests a telephonic interview with Applicant's representative, Thomas F. Brennan, at 612-373-6909 to expedite and facilitate examination of this case.

## §102 Rejection of the Claims

Claims 1, 11 and 21 were rejected under 35 U.S.C. § 102(b) for anticipation by Smith et al. (US 2002/0116600, hereinafter "Smith").

Applicant has amended claim 1, 11 and 21 to overcome this rejection. As amended, independent claims 1, 11 and 21 recite "including a first queue and a second queue, wherein <u>each of the plurality of queues holds pending memory requests and enforces an ordering in the commitment of the pending memory requests to memory.</u>" As noted by the Examiner in the Office Action, at p. 22, #30, line 5, such a newly added language to claims 1, 11 and 21 is fully supported from the Specification of the present patent application, for example, at Fig. 2 and p. 66, line 9 through p. 72, line 5.

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Smith describes using a reorder buffer having two threads (i.e., Thread 0 and Thread 1) for maintaining ordering in execution of instructions. Smith does not, however, teach or suggest using the reorder buffer for controlling the order in which the memory references resulting from the execution of the instructions are processed into a memory, as presently claimed in the amended claims 1, 11 and 21. Applicant is unable to find such a teaching in Smith.

Applicant respectfully submits that Smith fails to identically disclose each and every feature as taught by Applicant and claimed in independent claims 1, 11 and 21. Therefore, no *prima facie* case of anticipation presently exists with respect to claims 1, 11 and 21. Reconsideration is respectfully requested.

# §103 Rejection of the Claims

Claims 24-29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Smith in view of Barnes et al. (US 4,412,303) and Cray.

Applicant has amended independent claims 24 and 27 to overcome this rejection. As amended, independent claims 24 and 27 recite "including a first Lsync queue and a second Lsync queue, wherein each of the plurality of Lsync queues holds pending memory requests and enforces an ordering in the commitment of the pending memory requests to memory." As noted in the discussion of 102 rejections, this newly added limitation is fully supported from the Specification.

For the similar reasons set forth above in respect to claims 1, 11 and 21, Applicant respectfully submits that none of the cited references, alone or in combination, teach or suggest using the reorder buffer for controlling the order in which the resulting memory references are processed into a memory, as presently claimed in the amended claims 24 and 27. Applicant is unable to find such a teaching in any of the cited references. Therefore, no *prima facie* case of obviousness presently exists with respect to claims 24 and 27. Reconsideration is respectfully requested.

With respect to claims 2-6, 9, 10, 12-14, 19, 20, 22, 23, 25, 26, 28 and 29, these claims are patentable as being dependent on a patentable base claim for at least the same reason set forth above regarding the applicable independent claims.

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.116 - EXPEDITED PROCEDURE

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#### **Reservation of Rights**

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In the interest of clarity and brevity, Applicant may not have equally addressed every assertion made in the Office Action, however, this does not constitute any admission or acquiescence. Applicant reserves all rights not exercised in connection with this response, such as the right to challenge or rebut any tacit or explicit characterization of any reference or of any of the present claims, the right to challenge or rebut any asserted factual or legal basis of any of the rejections, the right to swear behind any cited reference such as provided under 37 C.F.R. § 1.131 or otherwise, or the right to assert co-ownership of any cited reference. Applicant does not admit that any of the cited references or any other references of record are relevant to the present claims, or that they constitute prior art. To the extent that any rejection or assertion is based upon the Examiner's personal knowledge, rather than any objective evidence of record as manifested by a cited prior art reference, Applicant timely objects to such reliance on Official Notice, and reserves all rights to request that the Examiner provide a reference or affidavit in support of such assertion, as required by MPEP § 2144.03. Applicant reserves all rights to pursue any cancelled claims in a subsequent patent application claiming the benefit of priority of the present patent application, and to request rejoinder of any withdrawn claim, as required by MPEP § 821.04.

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# **CONCLUSION**

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (612) 373-6909 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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_		Thomas F. Brennan	
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